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# AMSAT SATELLITE REPORT



**Volume 1 Number 19**  
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## **Record Turnout at Annual Meeting**

All the numbers are looking good according to AMSAT President Tom Clark, W3IWI. So he reported to the Members and guests assembled for the Official Annual Meeting at the Goddard Space Flight Center, Greenbelt, Maryland last October 17. Attendance was a record; the ballot count was way up this year; membership is up by 1000 from a year ago and many of the fund-raising goals have been attained.

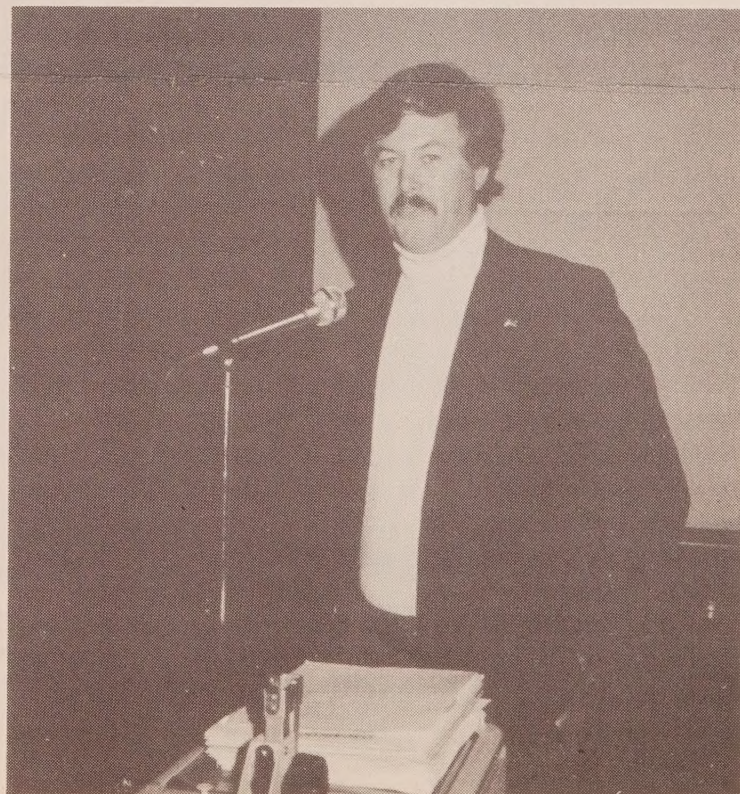
The day began with a special session of the Packet Radio Forum held at the Employees Recreation Center (see related story in this issue). After lunch scores of avid members gathered at the AMSAT-OSCAR Spacecraft Laboratory to view progress of the Phase IIIB and C hardware and to witness a live demonstration of the reception of UoSAT OSCAR 9 (UO-9). While the UO-9 pass was in progress the Lab was crammed with on-lookers to the point of nearly bursting with not a single vantage unoccupied. The UO-9 telemetry displayed on the CRT was quickly analyzed by KA1GD, Andy Zwirko, KE3D, Gordon Hardman and W3GEY, Jan King. Indications were that the Navigation Magnetometers, the backup computer and the radiation counters were on as was determined from the telemetry at 145.825 MHz.

Around 5:00 PM many of the group began assembling at the Rec Center again for the traditional attitude adjustment hour. The operator of the Rec Center, Barney, had a surprise for us this year. In addition to the super onion dip for chips he had prepared, this year the hot meat ball hors d'oeuvres were laced with a generous swish of very hot Tobasco (hot pepper) sauce. Surprise! During the informal festivities the slide presentation prepared by Jim Timulty, W4MID, assisted by Dick Jansson, WD4FAB, was run. AMSAT hopes to soon have the show on video cassette to circulate among clubs with an interest in satellites. It was a first rate production in the opinion of all those with whom this reporter spoke. Also running on a video monitor at the time was a video tape of an ESA film showing the preparation of the Ariane LO2 vehicle. Dinner was served beginning at about 6:00. Following the usual excellent meal served up by Barney, W3IWI called the Official Annual Meeting to order.

Tom began his Annual Report to the members by noting that there was good news and bad news. The good news was that in the fund raising department we had commitments of about \$180,000, or about  $\frac{2}{3}$  of that required to meet our Phase IIIB budget requirements. The bad news, he reported, was that we still have  $\frac{1}{3}$  (\$90K) to

go! Showing a breakdown of operating expenses and revenues, Tom pointed out a number of worrisome areas. For example, he explained that an annual member's dues (\$16 US, \$20 elsewhere) not only does not help to build the satellites but does not even fully cover the cost of *ORBIT* production and distribution and the modest member services needed to support that member for one year. Tom cited the deficit as being about 60¢ per member per annum. Moreover, he continued, the Life Member revenues present an even more sobering dilemma. Since 50% of the Life Member revenues must, by resolution of the Board, remain in reserve, the interest earned by those reserves is used to pay for the services provided the Life Members. Unfortunately, in order to equal the cost of the services provided the Life Members, Tom calculates that the Life Member Reserves would have to be earning interest at the rate of 34%! Thus, Tom concluded, the Life Member expenses and revenues are in a classic actuarial crunch similar to that of the U.S. Social Security mess. AMSAT Life Membership will become \$400 (US) on 1 July 82.

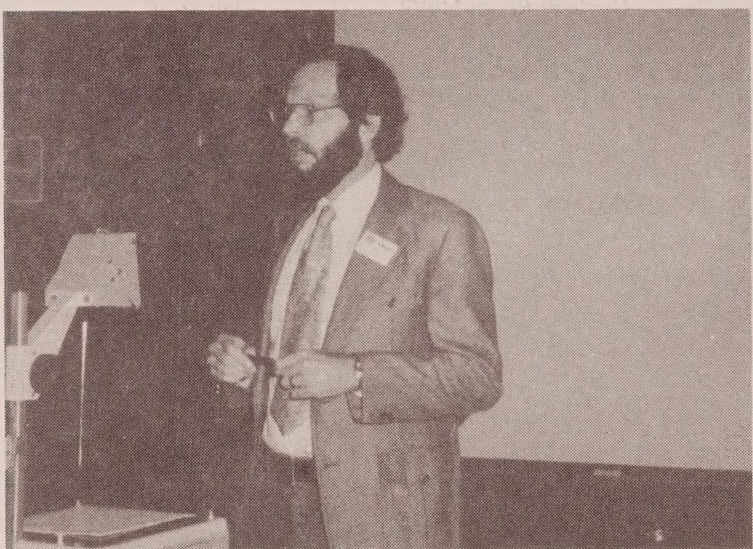
**Bernard Glassmeyer, W9KDR, ARRL Satellite Coordinator, addresses the Annual Meeting. Bernie announced that the new ARRL locator package will contain a UO-9 overlay soon.**



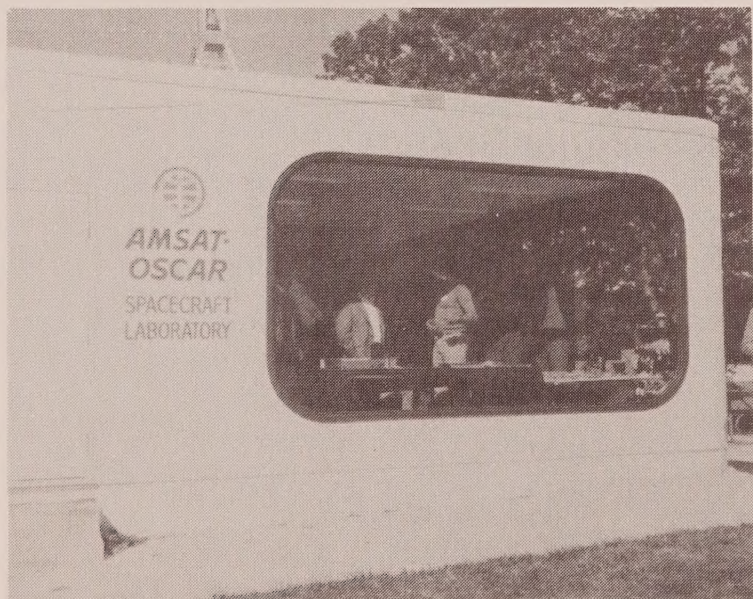




W3IWI emphasizes a point to the members at the Annual Meeting Saturday evening.



AMICON Design Chief KA6M speaks to the Packet Radio special session at Goddard on Saturday morning.



The AMSAT-OSCAR Spacecraft Laboratory on Saturday afternoon. Visible in the "fishbowl" are about a dozen members. Not visible but inside are another dozen or so. Poised just off to the right just off camera are another 4 or 5 dozen awaiting AOS of UO-9.

W3IWI then introduced several visiting parties including G3IOR, Pat Gowen, AMSAT Director from Norwich; W6XN, John Pronko, Project OSCAR President from Palo Alto; W9KDR, Bernard Glassmeyer, ARRL Satellite Coordinator. Bernie announced that ARRL now has overlays for UO-9 suitable for use with ARRL's new locator package.

Tom then announced that he would recommend to the Board the following day that five especially deserving individuals be awarded Honorary Life Membership in AMSAT. Those individuals were: W4PUJ, Dick Daniels, for his tireless efforts on the mechanical assembly and various other tasks on numerous OSCARs; G3YJO, Martin Sweeting, for his achievement in leading the UoSAT team which brought the spacecraft from dire schedule straits to a state of completion in time for launch last October 6; LU9HBG, Mario Acuna, for his efforts in connection with the magnetometer instruments on UoSAT and for his outstanding article in *ORBIT* explaining the devices; HA5WH, "Bandi" Geschwindt, for his support in the form of spacecraft modules for several AMSAT satellites; W9IQO, Joe Sugarman, for his fund raising efforts through JS&A in magazines earlier this year.

Next Tom announced that former AMSAT Director Will Webster, WB2TNC, and his wife Toni became parents the night before and thus were not able to be in attendance at the meeting. Tom read the inscription of a plaque that will be presented to Will which cited his contribution as Director, Net Control at WA3NAN and ad hoc AMSAT spokesman. A similar plaque honoring the numerous contributions of AMSAT founder W3PK, Perry Klein, was displayed and will be sent to Perry who could not attend.

The final item on the agenda of the meeting was the announcement of the balloting. Tom read the results of the election to the meeting. The results are printed elsewhere in this issue of *ASR*. Tom took special pride in noting that over 1800 valid ballots had been received this year; a record. He expressed his thanks to all the AMSAT members who participated in the counting of the ballots and congratulated the new Directors on their election. Finally, Tom explained that the reason that members' names appeared on the envelopes in which the ballots were contained was to insure the validity of the ballot. The envelopes were torn open and discarded after removing the ballot once the validity of the label had been ascertained. Only then did the tally commence. Thus, though absolute anonymity was not possible, in a practical sense, voter anonymity was the result.

The meeting then adjourned to diligently pursue good conversation with friends and the bottom of a keg. By all accounts the meeting was one of the best in anyone's memory. The new record of 102 will likely not stand for long, however. See you all next year!

### Reference Orbits

Day 307 3 Nov. 81 AO-8 18672 00:48:07 77.1°W  
Day 308 4 Nov. 81 UO-9 431 00:20:26 138.5°W



## ASR Spotlight On: UoSAT (Continued)

01	145 MHz General Data Beacon	On/Off	24	Secondary S/C Computer Power-Down	On/Off
02	435 MHz Engineering Data Beacon	On/Off	25	14 MHz H.F. Beacon Synthesiser Lock	In/Out
03	Primary Spacecraft Computer	On/Off	26	21 MHz H.F. Beacon Synthesiser Lock	In/Out
04	CCD Camera Module	On/Off	27	28 MHz H.F. Beacon Synthesiser Lock	In/Out
05	Radiation Detector - A	On/Off	28	Radiation Detector - B	On/Off
06	Magnetometer Expt.	On/Off	29	TIP Mass Uncaging Confirmation	Yes/No
07	7 MHz Beacon Expt.	On/Off	30	Speech Synthesiser Power	On/Off
08	14 MHz Beacon Expt.	On/Off	31	Visual Data Display Memory	On/Off
09	21 MHz Beacon Expt.	On/Off	32	Gravity Gradnt. Boom Motor Power	On/Off
10	28 MHz Beacon Expt.	On/Off	33	Secondary S/C Computer Power	On/Off
11	2.4 GHz Beacon Expt.	On/Off	34	HF Beacons Expt. Power	On/Off
12	10.47 GHz Beacon Expt.	On/Off	35	Navigation Magnetometer Power	On/Off
13	145 MHz Command RX	Squelch 0= signal present	36	S/C Computer Memory Error Bit -1	
14	435 MHz Command RX	Squelch 0= signal present	37	S/C Computer Memory Error Bit -2	
15	Status Calibrate		38	S/C Computer Memory Error Bit -3	
16	BCR Status	A/B	39	Status Calibrate	
17	H.F. Beacons Expt. Synthesisers	On/Off	40	Primary S/C Computer Data UART O/P	Active
18	Telecommand Decoder Status	Ground/Primary Computer	41	Gravity Gradient Boom Motor	Forward/Reverse
19	Magnetorquer	On/Off	42	Magnetorquer Power	Forward/Reverse
20	Primary S/C Computer Block Load Port	Enable/Disable	43	Magnetometer Expt.	Calibrate
21	Secondary S/C Computer Data O/P		44	Navigation Magnetorquer	Safe/Arm
22	Secondary S/C Computer Clock	Interrupt Failure	45	Gravity Gradient Boom Motor	Safe/Arm
23	Secondary S/C Computer Processor	Running			

## Board Meets for New Session

Sunday, 18 October began the new year for the AMSAT Board of Directors. They met at the Goddard Space Flight Center to conduct the business required by corporate law as well as important other business. A more complete report of the transactions and resolutions will appear in ASR and ORBIT subsequently. The following is the briefest synopsis.

The meeting was called to order at 09:30 AM by Chairman, W6SP. Present were Directors: W6SP, W3IWI, W3GEY, VE2VQ, K1HTV, G3IOR. Newly elected 1st Alternate Director W3XO was present. Absent was JA1ANG. Officers attending were VP's K9LF and WA2LQQ in addition to W3GEY and K1HTV. Treasurer K4YV and Office Manager M. Saragovitz were present as was Secretary to the Board, N3CHZ. Guests included AMSAT Engineer KE3D; Managing Editor W1XT; Phase III Ground Command Chief W1HDX; Project OSCAR President W6XN; K2UBC and WDØEEL.

The first order of business was the election of officers. The incumbents were unanimously reelected. Next, President W3IWI made his financial report to the Board. The Board then went on to discuss AMSAT publications and in particular the continuing rise in the cost to the organization of ORBIT. VE2VQ briefed on the SYNCART Project. K2UBC spoke of the forthcoming publication of his new satellite text commissioned by the ARRL. W3GEY briefed Phase III and UoSAT.

Full details later.

## Errata

Please note the following corrections to ASR #18.

(Page 2) Apogee Height: 536 km (333.1 miles) over standard Earth. UO-9 orbit 326 occurs on Wednesday, 28 Oct. 81, not 22 Oct.

(Page 3) Equation at bottom:

$$B_y = +183.486 * (N_x - 663.44)$$



The B.o.D. in session. (L to R), K4YV, W3GEY, W6SP, K9LF, VE2VQ (back of VQ's head, unfortunately), K1HTV, W1XT, M. Saragovitz, N3CHZ, W3IWI, KE3D and G3IOR. W6XN is behind K1HTV.

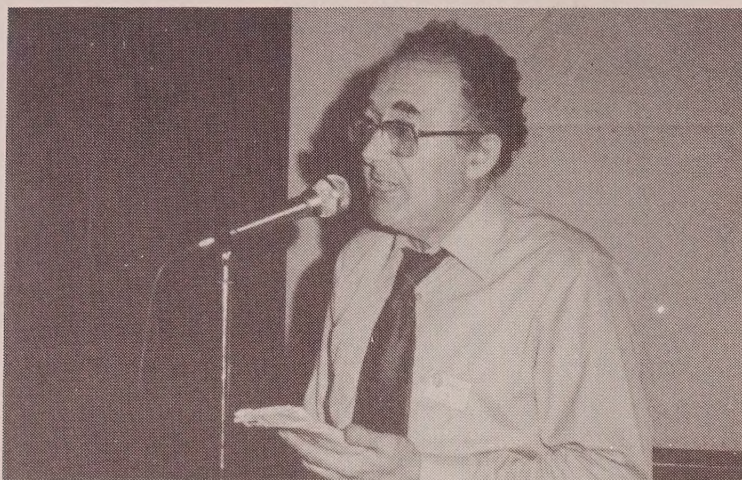
## Net Schedule Change

The 75-meter AMSAT Nets conducted on Tuesday evenings, local time, in the U.S. will be changing schedule. The "East Coast", "Mid-America", and "Pacific Coast" Nets will maintain the local time of day despite the change from Daylight Savings Time to Standard Time which occurred 25 Oct. In prior years these nets had maintained Universal Time (UTC or Greenwich Time) and thus when local time changed in the Autumn, the Nets appeared one hour earlier on Tuesday evening, local time. New times for the Nets are:

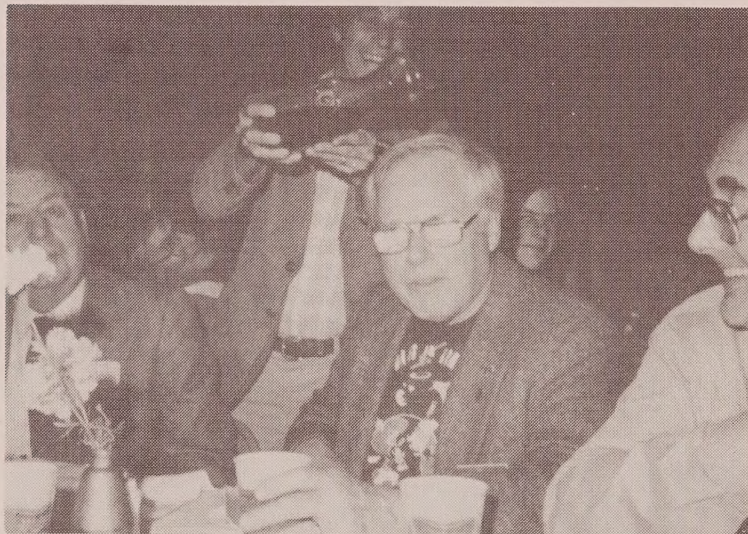
Wednesday 0200 UTC East Coast Net (Tuesday, 21:00 EST)  
0300 UTC Mid America Net (Tuesday, 22:00 EST)  
0400 UTC Pacific Coast Net (Tuesday, 23:00 EST)

The 20 Meter and 15 Meter International Nets on Sundays will maintain the UTC times they had of 1800 UTC and 1900 UTC, respectively. Thus they will occur at 13:00 EST and 14:00 EST, respectively.

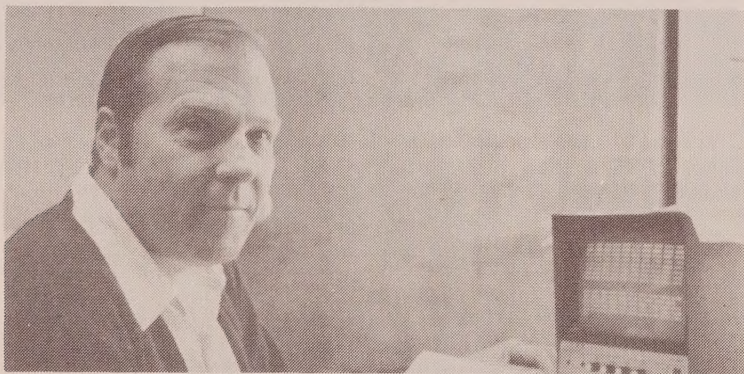




Director G3IOR addresses the Annual Meeting.



Saturday evening festivities included the initiation by grape of W3XO, center. That's W3OZ manning the carafe. ARRL Vice Director W3ABC on the left and G3IOR on the right watch with varying degrees of amusement at the impending shower.



Charlie Strange, W3CQB, monitors UO-9 telemetry on Saturday

## A Forth-Right Book

For those interested in obtaining a foothold on the IPS language used in the Phase III satellite software, a new book may prove of interest. *Starting Forth* is a new offering of especial merit according to an AMSAT reviewer. The IPS language authored by AMSAT DL President DJ4ZC and extensively adapted by W0PN is a derivative of Forth. (More accurately it is referred to as a "Forth-like" language.) The new book by Brodie is available in paper or hardback from Mountain View Press, P.O. Box 4656, Mountain View, CA 94040. (415) 961-4103.

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## Packet Radio Packs Room

The Packet Radio Forum held at the National Bureau of Standards facility in Gaithersburg, Maryland, drew a full house on Friday, 16 October. The approximately 100 attentive listeners heard numerous papers read describing packet radio progress and plans. Host Paul Rinaldo, W4RI, was apparently well-pleased by the turn-out. Paul is President of AMRAD, the Amateur Radio Research and Development Corporation, which jointly sponsored the forum together with AMSAT and ARRL. Paul has recently been named Editor of ARRL's newest periodical, *QEX* which will report on various experimental activities such as packet radio, spread spectrum radio, etc. Interested amateurs should contact Paul directly or contact ARRL HQ for info on *QEX*. Papers were read by a number of AMSAT members including Hank Magnuski, KA6M and Steve Robinson, W2FPY. Hank heads the AMICON (AMSAT International Computer Network) design team while Steve is AMSAT's Director of Research and Development. Both individuals exhibit a keen interest in packet radio. The KA6M/R repeater in the San Francisco area is probably the world's most popular packet repeater and has set numerous precedents. Other precedent setters at the forum were Doug Lockhart, VE7APU and Dave Borden, K8MMO. Doug's packet repeater in Vancouver, British Columbia was likely the world's first and is one of the terminals connected through the Anik satellite to Ottawa (ASR #12, pg. 2). By all accounts the meeting was a resounding success and a milestone in the continuing courtship of Amateur Radio and computer technology. On Saturday morning, 17 October, a special session of the Packet Radio forum was convened at the Goddard Space Flight Center. At this session the theme was the space-link aspects of packet radio with emphasis on what role Phase IIIB (and later SYNCART) might play in long-haul traffic distribution. W4RI introduced the speakers and John DuBois, W1HDX, began with a detailed description of the Phase III telecommand system. John is Team Leader of the Phase III Ground Command Team and has participated in the design and implementation of the ground command hardware. Following John's presentation W4RI again introduced KA6M, VE7APU and K8MMO who responded to questions from the floor. The two day event was marked by enthusiasm and information exchange. A number of future goals have been set and KA6M will keep us informed as additional milestones are attained.

## B.o.D. Election Results

Elected to the Board of Directors: W3GEY, W6SP, K1HTV, VE2VQ.

Elected as 1st and 2nd Alternates: W3XO, W6CG.